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The stromal vascular fraction from fat tissue in the treatment of osteochondral knee defect: Case report

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Abstract

© 2018 Salikhov, Masgutov, Chekunov, Tazetdinova, Masgutova, Teplov, Galimov, Plakseichuk, Yagudin, Pankov and Rizvanov. In this study we applied autologous fat tissue stromal vascular fraction (SVF) cells in combination with microfracturing technique in a 36-year-old man with an osteochondral lesion of the medial femoral condyle 8 months after the injury. Cell material was generated by fat tissue liposuction from the anterior abdominal wall with subsequent extraction of the SVF and injected through a mini-arthrotomy portal with subsequent fibrin sealant fixation. The follow-up period was 2 years. Clinical score improved from 23 to 96 according to IKDC and from 10 to 90 according to EQ-VAS at 24 months follow-up. Magnetic resonance imaging (MRI) before the surgery revealed an osteochondral lesion with development of significant trabecular edema that remained unchanged for 6 months despite conservative treatment. MRI 1 and 2 years after the surgery showed the recovery of the damaged cartilage thickness with somewhat uneven structure and a decrease in the trabecular edema of the femoral condyle. The use of SVF cells with fibrin sealant fixation might be a promising approach in the treatment of osteochondral joint lesions. Further studies are required.

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Keywords

Fat tissue, Fibrin sealant, Mesenchymal stem cells, Osteochondral lesions of the knee, Stromal vascular fraction

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